Robert Jones
Behlen Manufacturing Company
P.O. Box 115
Goshen, Indiana 46528

Dear Mr. Jones:

Re: Exempt Construction and Operation Status,
039-12894-00379

The application from Behlen Manufacturing Company, received on October 25, 2000, has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-1.1-3, it has been determined that the following agricultural products manufacturing operation, to be located at 2600 College Avenue, Goshen, Indiana, is classified as exempt from air pollution permit requirements:

(a) One (1) galvanized welding area including (1) welding station, with a maximum capacity of 1.3 pounds of ER70S-3 welding wire per hour.

(b) One (1) silver water based enamel touch-up process with a maximum capacity of 0.1 pounds per hour, utilizing a brush application method,

(c) natural gas-fired space heaters with a combined heat input capacity of 9.0 million British thermal units per hour,

(d) pneumatic conveying of thermoplastic granules into storage silos with a maximum capacity of 0.75 tons of granules per hour, and

(e) Three (3) rotomolding units

The following conditions shall be applicable:

(1) Pursuant to 326 IAC 5-1-2 (Opacity Limitations) except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following:

(a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuos opacity monitor in a six (6) hour period.

(2) Pursuant to 326 IAC 6-3 (process operations), the PM emissions from the pneumatic conveying of the thermoplastic granules shall not exceed the allowable particulate matter (PM) emissions rate of 0.6 pounds per hour when operating at a process weight rate of 0.75 tons per hour.

The pounds per limitation was calculated with the following equation:

Interpolation of the data for the process weight rate up to 60,000 pounds per hour shall be accomplished by the use of the equation:

$E = (4.1)(P^{0.67})$ Where E= rate of emissions in pounds per hour
P= process weight rate

(3) The Permittee shall not open burn any material except as provided in 326 IAC 4-1-3, 326 IAC4-1-4 or 326 IAC 4-1-6.

This existing source has been issued a FESOP (F039-5594-00379) on December 12, 1996 and a registration (CP 039-9206-00379) on January 5, 1998. This exemption shall supercede the conditions of the FESOP and registration.

An application or notification shall be submitted in accordance with 326 IAC 2 to the Office of Air Management (OAM) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source, which may increase the potential VOC or NOx emissions to 10 tons per year or increase the PM10 potential emissions to 5 tons per year.

Sincerely,

Paul Dubenetzky, Chief
Permits Branch
Office of Air Management

GMM

cc: File - Elkhart County
Elkhart County Health Department
Air Compliance - Paul Karkiewicz
Northern Regional Office
Permit Tracking - Janet Mobley
Technical Support and Modeling - Michele Boner
Compliance Data Section - Karen Nowak

Indiana Department of Environmental Management
Office of Air Management

Technical Support Document (TSD) for a Exemption

Source Background and Description

Source Name:	Behlen Mfg. Co.
Source Location:	2600 College Ave. Goshen, IN 46528
County:	Elkhart
SIC Code:	3523, 3089
Exemption No.:	039-12894-00379
Permit Reviewer:	Gail McGarrity

The Office of Air Management (OAM) has reviewed an exemption application from Behlen Manufacturing Company relating to the following agricultural products Manufacturing emission units.

(a) One (1) galvanized welding area including (1) welding station, with a maximum capacity of 1.3 pounds of ER70S-3 welding wire per hour.

(b) One (1) silver water based enamel touch-up process with a maximum capacity of 0.1 pounds per hour, utilizing a brush application method,

(c) natural gas-fired space heaters with a combined heat input capacity of 9.0 million British thermal units per hour,

(d) pneumatic conveying of thermoplastic granules into storage silos with a maximum capacity of 0.75 tons of granules per hour, and

(e) Three (3) rotomolding units.

History

On December 12, 1996 Behlen Manufacturing Company was issued a FESOP (F039-5594-00379), then on January 5, 1998 a registration (CP 039-9206-00379) was issued that superseded the conditions of the FESOP. Now, Behlen Manufacturing Company has submitted an exemption application to the OAM requesting exemption from the registration.

The following equipment was <u>removed:</u>

(1) Two (2) electro coating booths identified as EU-13, EU-14, with a maximum capacity of 2.5 units per hour, utilizing dip coating,

(2) one (1) electro coating touch-up booth identified as EU-15, with a maximum capacity of 2.5 units per hour, utilizing HVLP spray application;

(3) one (1) stabilizing tank, identified as EU-16,

(4) Stock tank sealing process with a maximum capacity of 0.5 unit per hour,

(5) one (1) touch-up process with a maximum capacity of 1 unit per hour, utilizing a brush application method,

(6) galvanizing welding area including eight (8) welding stations, each with a maximum capacity of 1.3 pounds of ER70S-3 welding wire per hour.

Enforcement Issue

There are no enforcement actions pending.

The staff recommends to the Commissioner that the exemption be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on October 25, 2000, additional information was received on November 9, 2000 and November 16,2000.

Emission Calculations

See Appendix A of this document for detailed emissions calculations. These calculations are provided in Appendix A of this document pages 1- 4.

Potential To Emit

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA."

This table reflects the PTE before controls.

Pollutant	Potential To Emit (tons/year)
PM	3.13
PM-10	3.13
SO_2	0
VOC	0.583
CO	0.08
NO_x	3.9

HAP's	Potential To Emit (tons/year)
Ethylene Glycol	0.0016
Glycol Ethers	0.0024
Manganese	*0.02*
TOTAL	0.024

Since the potential to emit PM10 is less than 5 tons per year and the potential to emit NOx and VOC are less then 10 tons per year, this source is exempt.

County Attainment Status

The source is located in Elkhart County.

Pollutant	Status
PM-10	attainment
SO_2	attainment
NO_2	attainment
Ozone	maintenance
CO	attainment
Lead	attainment

(a) Volatile organic compounds (VOC) and oxides of nitrogen (NOx) are precursors for the formation of ozone. Therefore, VOC and NO_X emissions are considered when evaluating the rule applicability relating to the ozone standards. Elkhart County has been designated as maintenance for ozone. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for PSD, 326 IAC 2-2.

Federal Rule Applicability

(1) There are no New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) applicabile to this source.

(2) There are no National Emissions Standards for Hazardous Air Pollutants (NESHAPS) for this source.

State Rule Applicabilty

326 IAC 6-3-2 (Process Operations**)**

Pursuant to 326 IAC 6-3-2, the allowable particulate matter from the pneumatic conveying shall be limited to 0.6 pounds per hour when operating at a process weight rate of 0.75 tons per hour.

The pounds per limitation was calculated with the following equation:

Interpolation of the data for the process weight rate up to 60,000 pounds per hour shall be accomplished by the use of the equation:

$E= (4.1) (P^{0.67})$ Where E= rate of emissions in pounds per hour
P= process weight rate

$E= (4.1) (0.75)^{0.67}$

E= 3.4 lb/hr

PM10 0.6 lbs/hr < 3.4 lb/hr

No add on control equipment is needed to comply with this limit.

Conclusion

The operation of this agricultural products manufacturing operation shall be subject to the conditions of the attached proposed exemption No. 039-12894-00379.

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100
Small Industrial Boiler

Company Name: **Behlen Mfg. Co.**
Address City IN Zip: **2600 College Ave. Goshen, IN 46528**
Exemption: **039-12894-00379**
Plt ID: **039-00379**
Reviewer: Gail McGarrity
Date: 11-8-00

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
9.0	78.8

	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	0.6	100.0 **see below	5.5	84.0
Potential Emission in tons/yr	0.1	0.3	0.0	3.9	0.2	3.3

*PM emission factor is filterable PM only. PM10 emission factor is condensable and filterable PM10 combined.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
Note: Check the applicable rules and test methods for PM and PM10 when using the above emission factors to confirm that the correct factor is used (i.e., condensable included/not included).

See page 2 for HAPs emissions calculations.

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100
Small Industrial Boiler
HAPs Emissions
Company Name: Behlen Mfg. Co.
Address City IN Zip: 2600 College Ave. Goshen , IN 46528
Exemption: 039-12894-00379
Plt ID: 039-00379
Reviewer: Gail McGarrity
Date: 11-8-2000

HAPs - Organics

	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	8.278E-05	4.730E-05	2.957E-03	7.096E-02	1.340E-04

HAPs - Metals

	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	1.971E-05	4.336E-05	5.519E-05	1.498E-05	8.278E-05

Methodology is the same as page 1.

The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Appendix A: Emissions Calculations
VOC and Particulate
From Surface Coating Operations

Company Name: **Behlen Manufacturing Company**
Address City IN Zip: **2600 College Ave. , Goshen, IN 46528**
Exemption: 039-12894-00379
Plt ID: **039-00379**
Reviewer: **Gail McGarrity**
Date: **11-16-2000**

Material	Density (Lb/Gal)	Weight % Volatile (H20 & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Volatiles (solids)	Gal of Mat. (gal/unit)	Maximum (unit/hour)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC pounds per hour	Potential VOC pounds per day	Potential VOC tons per year	Particulate Potential (ton/yr)	lb VOC/gal solids	Transfer Efficiency
Citrus Cleaner	6.7	87.60%	17.3%	9.6%	20.1%	70.3%	0.21500	0.003	2.17	0.64	0.0040	0.0672	0.0018	0.00	1.42	100%
MEK	6.8	100.00%	0.0%	0.1%	0.0%	99.90%	0.19200	0.011	0.01	0.01	0.0000	0.0003	0.0001	0.00	0.01	100%
Solvent 6638	6.7	100.00%	0.0%	0.1%	0.0%	99.00%	0.15000	0.062	0.01	0.01	0.0001	0.0015	0.0003	0.00	0.01	100%
Silver Enamel Pain	8.7	23.50%	15.0%	8.4%	17.0%	75.00%	0.00560	2.500	0.88	0.73	0.0102	0.2441	0.0446	0.00	0.97	100%
												2.1378	0.3912	0.0023		

State Potential Emissions **Add worst case coating to all solvents**

METHODOLOGY

Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)
Pounds of VOC per Gallon Coating = (Density (lb/gal) * Weight % Organics)
Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr)
Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (24 hr/day)
Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (8760 hr/yr) * (1 ton/2000 lbs)
Particulate Potential Tons per Year = (units/hour) * (gal/unit) * (lbs/gal) * (1- Weight % Volatiles) * (1-Transfer efficiency) *(8760 hrs/yr) *(1 ton/2000 lbs)
Pounds VOC per Gallon of Solids = (Density (lbs/gal) * Weight % organics) / (Volume % solids)
Total = Worst Coating + Sum of all solvents used

Appendix A: Emissions Calculations

Particulate

From Welding Operations

Company Name: Behlen Manufacturing Company

Address City IN Zip: 2600 College Ave. , Goshen, IN 46528

Exemption: 039-12894-00379

Reviewer: Gail McGarrity

Date: 11-16-2000

Pneumatic Conveying								
PTE								
		ton/hr	lb/ton	lbs/hr				
	PM10	0.75	0.795	0.59625				
		lb/hr	hr/day	lb/day				
	PM10	0.59625	24	14.31				
		lb/hr	hr/yr	lbs/yr/2000				
	PM10	0.59625	8760	2.611575	tons/yr			
PTE PM10		**2.6 tons/yr**						
			lb/					
WELDING		lb wire/hr	1000 lb wire	lb/hr	hr/yr	lbs/yr/2000	tons/yr	
PM10	PM10	1.3	5.2	0.00676	8760	0.0296088	0.0296	
Chromium	Cr	1.3	0.01	1.30E-05	8760	5.69E-05	0.00006	
Cobalt	Co	1.3	0.01	1.30E-05	8760	5.69E-05	0.00006	
Manganese	Mn	1.3	3.18	0.004134	8760	1.81E-02	0.0181	
Nickel	Ni	1.3	0.01	1.30E-05	8760	5.69E-05	0.00006	
							0.01828	
Potential Emissions	PM10	SO2	VOC	CO	NOx	HAPS		
Combustion	0.3	0	0.2	0.8	3.9			
Welding	0.03	0	0	0	0			
Welding Touch-Up	0	0	0.04	0	0			
Rotomolding	2.6	0	0	0	0			
Cleaners	0	0	0.346	0	0			
Plant wide	**2.93**	**0**	**0.586**	**0.8**	**3.9**	**0.0228**		
Before Equipment	PM10	SO2	VOC	CO	NOx	HAPS		
Removal PTE	**7.94**	**0**	**12.7**	**1.6**	**3.9**	**12.4**		